

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

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Please add the following new claims 32 - 63:

32. A subscriber terminal on a subscriber terminal side of a communication system including on a network side a packet data communication system having a base station system, for performing a user packet data transfer between said subscriber terminal side and said base station system on said network side, comprising:
- a1) means adapted to provide a radio communication link between said base station system on said network side and said subscriber terminal side;
 - a2) means adapted to provide radio resources, to be used for said user data packet transfer, on said radio communication link;
 - a3) a physical connection controller adapted to provide a physical connection, for performing said user data packet transfer, on said radio communication link between said base station system and said subscriber terminal side by scheduling said user data packets as a number of radio blocks on said radio resources on said radio communication link, said physical connection indicating in the subscriber terminal side and the network side that the subscriber terminal side and the network side are included in the radio resources scheduling process a3) for performing said user data packet transfer;
 - b1) a transmission detector including an active period detector adapted to monitor, for a user data packet transfer between said network side and said subscriber terminal side, the inter-arrival time of user data packets to be transferred as said radio blocks scheduled on said radio resources on said radio communication link by said physical connection controller and to

b2) determine as an active period the period from a first user data packet to a last user data packet for which each monitored inter-arrival time falls in a predetermined range; and

c) said physical connection controller further including a physical connection maintaining device adapted to maintain said physical connection between said subscriber terminal side and said network side in said active period.

33. A subscriber terminal according to claim 32, wherein:

said active period detector is further adapted for detecting silence periods in which no data packets for data packet transfer are available on said subscriber terminal side; and

said physical connection controller includes a physical connection terminator for terminating said physical connection during said silence periods detected by said active period detector.

34. A subscriber terminal according to claim 32, wherein said active period detector comprises a real-time application data detector for detecting whether said data packets are real-time data packets.

35. A subscriber terminal according to claim 32, wherein said physical connection maintaining device for maintaining said physical connection between said subscriber terminal side and said network side in said active period comprises a data packet transmission delay device for delaying the transmission of a data packet at least for the inter-arrival time as monitored by said active period detector.

36. A subscriber terminal according to claim 32, wherein:

a subscriber terminal side transmitter queue from which data packets are successively transmitted to the network side;

a subscriber terminal side transmitter queue monitoring device for determining whether the transmitter queue comprises data packets to be transmitted;

a subscriber terminal side transmitter queue information setting means for determining, on the basis of the determination made by said transmitter queue monitoring means, a transmitter queue information indicating whether the transmitter queue is empty (CV=0) or whether the transmitter queue contains at least one data packet to be transmitted to the network side (CV>0); and

a subscriber terminal side transmitter for transmitting to said network side data packets from the transmitter queue and for transmitting in association with a respective data packet said transmitter queue information.

37. A subscriber terminal according to claim 36, wherein:

said physical connection maintaining device comprises a subscriber terminal side timer for counting the inter-arrival time when a respective data packet is transmitted;

if said subscriber terminal side transmitter queue monitoring device does not determine an entry of a new data packet in the transmitter queue in said counted inter-arrival time, said subscriber terminal side transmitter transmits a special data packet to the network side and in association therewith a transmitter queue information indicating that the transmitter queue is empty.

38. A subscriber terminal according to claim 37, wherein said special data packet is the last transmitted data packet or a dummy data packet.

39. A subscriber terminal according to claim 36, further comprising an uplink release acknowledgement message detector for determining the receipt of an uplink release acknowledgement message transmitted from the network side in response to receiving a transmitter queue information (CV=0) indicating that the transmitter queue is empty; and wherein if said subscriber terminal transmitter queue monitoring means detects a new entry of data packet in said transmitter queue after said subscriber terminal transmitter has transmitted a transmitter queue information (CV=0) indicating that the transmitter queue is empty, an uplink release acknowledgement message detected by said uplink release acknowledgement message detector is not answered by transmitting an uplink release confirmation message but by transmitting said new data packet by said subscriber terminal transmitter for maintaining said physical connection.

40. A subscriber terminal according to one or more claim 39, wherein said transmitter queue information is transmitted in a respective data packet.

41. A communication system for performing packet data transfer on a connection between the subscriber terminal side and a network side, wherein during a data packet transfer a physical connection is maintained which indicates in the subscriber terminal and

the network side that the subscriber terminal and the network side are capable of performing said packet data transfer, comprising at least one subscriber terminal according to claim 32.

42. A network controller on a network-side of a communication system including on said network side a packet data communication system having a base station system, for performing a user packet data transfer between said base station system on said network side and a subscriber terminal side, comprising:

a1) means adapted to provide a radio communication link between said base station system on said network side and said subscriber terminal side;

a2) means adapted to provide radio resources , to be used for said user data packet transfer, on said radio communication link;

a3) a physical connection controller adapted to provide a physical connection, for performing said user data packet transfer, on said radio communication link between said base station system and said subscriber terminal side by scheduling said user data packets as a number of radio blocks on said radio resources on said radio communication link,

said physical connection indicating in the subscriber terminal side and the network side that the subscriber terminal side and the network side are included in the radio resources scheduling process a3) for performing said user data packet transfer;

b1) a transmission detector including an active period detector adapted to monitor, for a user data packet transfer between said network side and said subscriber terminal side, the inter-arrival time of user data packets to be transferred as said radio blocks scheduled on said radio resources on said radio communication link by said physical connection controller and to

b2) determine as an active period the period from a first user data packet to a last user data packet for which each monitored inter-arrival time falls in a predetermined range; and

c) said physical connection controller further including a physical connection maintaining device adapted to maintain said physical connection between said subscriber terminal side and said network side in said active period .

43. A network controller according to claim 42, wherein:

said active period detector is further adapted for detecting silence periods in which no data packets for data packet transfer are available on said network side; and

said physical connection controller includes a physical connection terminator for terminating said physical connection during said silence periods detected by said active period detector.

44. A network controller according to claim 42, wherein said active period detector comprises a real-time application data detector for detecting whether said data packets to be transmitted from said network side are real-time data packets.

45. A network controller according to one or more of claims 52, wherein said physical connection maintaining device for maintaining said physical connection between said subscriber terminal side and said network side in said active period comprises a data packet transmission delay device for delaying the transmission of a data packet at least for the inter-arrival time as monitored by said active period detector.

46. A network controller according to claim 42, further comprising:
a network side transmitter queue from which data packets are successively transmitted to the subscriber terminal side;
a network side transmitter queue monitoring device for determining whether the transmitter queue comprises data packets to be transmitted;
a network side transmitter queue information setting means for determining, on the basis of the determination made by said transmitter queue monitoring means, a transmitter queue information indicating whether the transmitter queue is empty or whether the transmitter queue contains at least one data packet to be transmitted to the subscriber terminal side; and
a network side transmitter for transmitting to said subscriber terminal side data packets from the transmitter queue and for transmitting in association with a respective data packet said transmitter queue information.

47. A network controller according to claim 46, wherein:
said physical connection maintaining device comprises a network side timer for counting the inter-arrival time when a respective data packet is transmitted;
if said network side transmitter queue monitoring device does not determine an entry of a new data packet in the transmitter queue in said counted inter-arrival time, said network side transmitter transmits a special data packet to the subscriber terminal side

and in association therewith a transmitter queue information indicating that the transmitter queue is empty.

48. A network controller according to claim 47, wherein said special data packet is the last transmitted data packet or a dummy data packet.

49. A network controller according to claim 46, wherein:

said physical connection maintaining device comprises a network side timer for counting the inter-arrival time when a respective data packet is transmitted;

if said network side transmitter queue monitoring device does not determine an entry of a new data packet in the transmitter queue in said counted inter-arrival time, said network side transmitter transmits a packet switched signalling message to the subscriber terminal side and in association therewith a transmitter queue information indicating that the transmitter queue is empty.

50. A network controller according to claim 46, wherein said transmitter queue information is transmitted in a respective data packet.

51. A communication system for performing packet data transfer on a connection between the subscriber terminal side and a network side, wherein during a data packet transfer a physical connection is maintained which indicates in the subscriber terminal and the network side that the subscriber terminal and the network side are capable of performing said packet data transfer, comprising at least one network controller according to claim 42.

52. A communication system for performing packet data transfer on a connection between the subscriber terminal side and a network side, wherein during a data packet transfer a physical connection is maintained which indicates in the subscriber terminal and the network side that the subscriber terminal and the network side are capable of performing said packet data transfer, comprising at least one subscriber terminal according to claim 32 and at least one network controller according to claim 42.

53. A method for transferring, in a communication system including on a network side a packet data communication system having a base station system, user data packets between said network side and a subscriber terminal side, comprising the following steps:

a1) providing a radio communication link between said base station system on said network side and said subscriber terminal side;

a2) providing radio resources , to be used for said user data packet transfer, on said radio communication link;

a3) providing a physical connection , for performing said user data packet transfer, on said radio communication link between said base station system and said subscriber terminal side by scheduling said user data packets as a number of radio blocks on said radio resources on said radio communication link,

said physical connection indicating in the subscriber terminal side and the network side that the subscriber terminal side and the network side are included in the radio resources scheduling process a3) for performing said user data packet transfer;

b1) monitoring, for a user data packet transfer between said network side and said subscriber terminal side, the inter-arrival time of user data packets to be transferred as said radio blocks scheduled on said radio resources on said radio communication link; and

b2) determining as an active period the period from a first user data packet to a last user data packet for which each monitored inter-arrival time falls in a predetermined range; and

c) maintaining said physical connection between said subscriber terminal side and said network side in said active period.

54. A method according to claim 53, further comprising:

detecting silence periods in which no data packets for data packet transfer are available on said subscriber terminal side; and

terminating said physical connection during said silence periods.

55. A method according to claim 53, further comprising detecting whether said data packets are real-time data packets.

56. A method according to claim 53, further comprising delaying the transmission of a data packet at least for the inter-arrival time as monitored by said active period detector.

57. A method according to claim 53, further comprising:
transmitting from a transmitter queue data packets;
determining whether the transmitter queue comprises data packets to be transmitted;
determining a transmitter queue information indicating whether the transmitter queue is empty ($CV=0$) or whether the transmitter queue contains at least one data packet to be transmitted to the network side ($CV>0$); and
transmitting data packets from the transmitter queue and in association with a respective data packet said transmitter queue information.
58. A method according to claim 57, further comprising:
counting the inter-arrival time when a respective data packet is transmitted; and
wherein if an entry of a new data packet into the transmitter queue is not determined in said counted inter-arrival time, transmitting a special data packet from the network side and in association therewith a transmitter queue information indicating that the transmitter queue is empty.
59. A method according to claim 58, further comprising transmitting as said special data packet the last transmitted data packet or a dummy data packet.
60. A method according to claim 57, further comprising:
receiving on the network side a transmitter queue information ($CV=0$) indicating that the transmitter queue is empty;
transmitting an uplink release acknowledgement message from the network side to the subscriber terminal side;
determining in the subscriber terminal side the receipt of said uplink release acknowledgement message;
if a new entry of data packet in said transmitter queue is detected after said subscriber terminal transmitter has transmitted a transmitter queue information ($CV=0$) indicating that the transmitter queue is empty, said subscriber terminal does not answer the uplink release acknowledgement message by transmitting an uplink release confirmation message but by transmitting said new data packet for maintaining said physical connection.

61. A method according to one or more claims 53, wherein said transmitter queue information is transmitted in a respective data packet.

62. A method according to claim 57, further comprising counting the inter-arrival time when a respective data packet is transmitted; and wherein if an entry of a new data packet into the transmitter queue is not determined in said counted inter-arrival time , transmitting a signalling message from the network side and in association therewith a transmitter queue information indicating that the transmitter queue is empty.